



Research Paper

An economic analysis of area, production of organic products and its export in India

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ABSTRACT : This paper focus on the economic analysis of area, production of organic products and its export in India. India is endowed with various types of naturally available organic form of nutrients in different parts of the country and it helps for organic cultivation of crops substantially. Organic products are grown under a system of agriculture without the use of chemical fertilizers and pesticides with an environmentally and socially responsible approach. India's total area under organic certification is 5.69 million hectares in 2013-14 and its global rank is 10th. The growth rate of cultivation of organic area of India is 17.35 per cent; of which wild collection is 10.51 per cent during 2004-2013. Among all the states in India, Uttar Pradesh the has highest area under organic farming followed by Himachal Pradesh, Madhya Pradesh and Maharashtra in 2011-12. The share of export of organic products in terms of volume to USA (42.16 %) was the highest followed by European Union (32.3 %), Canada (21.68 %). The total volume of export of organic products from India was 177765.26 metric tons worth of Rs. 1328.6 crores during the period of 2013-14. Compound growth rate of export quantity of organic products of India is 46.22 per cent and export value is 34.99 per cent during 2002-03 to 2013-14. India exports around 135 organic products; of which, the share of cotton from India was (54.04 %) followed by cereals and millets (19.79 %) basmati rice (11.00 %) in 2013-14.

KEY WORDS : Organic, Export, Area, Production, Productivity

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INTRODUCTION :

“Organic products are grown under a system of agriculture without the use of chemical fertilizers and pesticides with an environmentally and socially responsible approach. This is a method of farming that works at grass root level preserving the reproductive and regenerative capacity of the soil, good plant nutrition, and sound soil management, produces nutritious food rich in vitality which has resistance to diseases.

India is bestowed with lot of potential to produce all varieties of organic products due to its various agro climatic regions. In several parts of the country, the inherited tradition of organic farming is an added advantage. This holds promise for the organic producers to tap the market which is growing steadily in the domestic market related to the export market. To support the export prospects, Ministry of Commerce launched the “National Programme on Organic Production” (NPOP) defining the National Standards for Organic Production (NSOP)

and the procedure for accreditation and certification in 2000. India now has 30 accredited certification agencies for facilitating the certification to growers. For area expansion and technology transfer, Ministry of Agriculture launched a National Project on Promotion of Organic Farming (NPOF-DAC) and earmarked funds for setting up of organic and biological input production units, vermicompost production units and for organic adoption and certification under various schemes such as NHM (now MIDH), NMSA and RKVY.

- To study the area, production and productivity of organic products in India.
- To analyse the export of organic products in India.

MATERIALS AND METHODS :

The present study used the secondary data collected from secondary sources. The time series data on area, production, productivity and export of organic products in India, were collected from publication of National Programme of Organic Production (NPOP), APEDA (Agricultural Processed Food Product and Export Development Authority) and The world of organic agriculture statistics and emerging trends FiBL and IFOAM, International Competence Centre for Organic Agriculture (ICCOA), National Centre of Organic Farming (NCOF), reports, journals, periodicals and newspapers etc.

Percentage analysis was used for making simple comparisons. For calculating percentage the frequency of the particular cell was multiplied by 100 and divided by the total number of respondents pertaining to particular cell. Percentage was corrected to two decimal places.

Growth rate was calculated for area, production, productivity of organic products in present study. Growth rates are measures of performance of economic variables. They are not developed to predict; but describe the trends in variables over time. Hence, they are commonly used as indicators of trends in the time series data. Compound growth rate was estimated with the help of following exponential model.

$$Y = a b^t e$$

where,

Y = Dependent variable for which growth data is estimated.

a = Intercept.

b = Regression co-efficient.

t = Time variable.

e = Error term.

The logarithmic form of the above equation estimated the compound growth rate

$$\log Y = \log a + t \log b$$

The compound growth rate (g) was estimated by using

$$g = [\text{Anti log of } (b) - 1] * 100$$

RESULTS AND DATA ANALYSIS :

The results of the study was presented and discussed in two sections *i.e.*, analysis of area, production and productivity and export of organic products

Area :

The annual compound growth rate was estimated for area under organic cultivation in India and it is presented in Table 1. The trend line was drawn separately

Sr. No.	Year	(Area in hectares)					
		Organic area	Annual growth rate	Wild collection	Annual growth rate	Total organic area	Annual growth rate
1.	2004	76000	-	2432500	-	2508500	-
2.	2005	185937	59.125	2385963	-1.703	2571900	2.527
3.	2006	432259	132.48	2385963	0.00	2818222	9.58
4.	2007	1030311	138.36	1769689	-25.83	2800000	-0.65
5.	2008	1018000	-1.19	2781530	57.18	3799530	35.70
6.	2009	1180000	15.91	3360000	20.80	4540000	19.49
7.	2010	780000	-33.90	3650000	8.63	4430000	-2.42
8.	2011	1084266	39.01	4477526	22.67	5561792	25.55
9.	2012	500000	-53.89	4700000	4.97	5200000	-6.50
10.	2013	510000	2.00	5180000	10.21	5690000	9.42
CGR		17.35	-	10.51	-	10.96	-

Source: APEDA

for organic area, wild collection and total area and it is given in Fig. 1 to 3.

It could be seen from the Table 1 that currently, India ranks 10th among the top ten countries in terms of cultivable land under organic certification. The certified area includes 15 per cent cultivated area with 0.72 million hectares and rest 85 per cent (3.99 million hectare) is forest and wild area for collection of minor forest produce. The total area under organic certification is 5.69 million hectare in the 2013-14. Organic agriculture offers trade

opportunities for farmers in the developing and developed countries. India has tremendous potential, largely untapped; for a major break through in organic agriculture.

It could be inferred from the Table 1 that India's organic area in 2004 was 76000 hectares and wild collection area was 2432500 million hectares. In the year of 2013 organic area was 510000 ha and wild collection was 518000 hectares, respectively. Total area of both organic and wild collection in India has increased from 2508500 hectares in 2004 to 5690000 hectares in 2013.

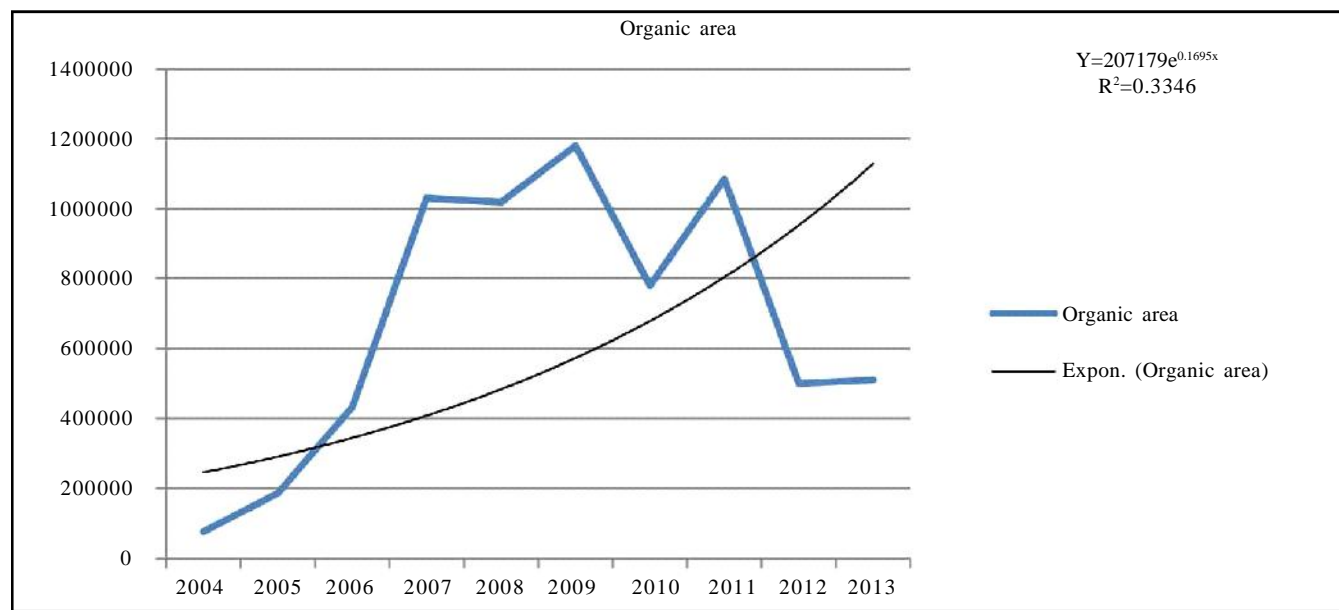


Fig. 1 : Growth of organic area

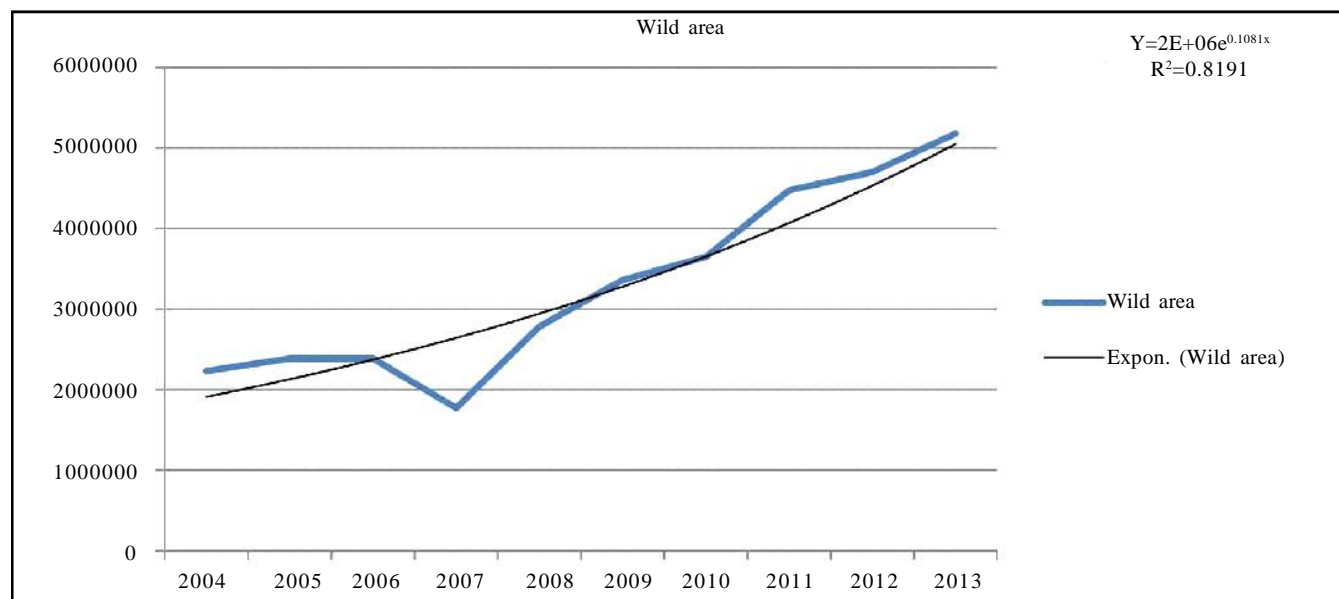


Fig. 2 : Growth of wild area

The compound growth rate of India's organic area and wild collection area was 17.3 per cent and 10.5 per cent, respectively during the period 2004 to 2013. The compound growth rate of India's total organic area including wild collection was 10.9 per cent.

State wise area and production :

The data related to state wise area and production was collected from secondary sources and it is given in Table 2

It could be observed from the table that Uttar Pradesh has the highest certified area under organic

cultivation *i.e.* 2.59 million hectares followed by Himachal Pradesh (0.93 million hectares), Madhya Pradesh (0.43 million hectares) and Maharashtra (0.25 million hectares) in 2011-12. In terms of organic production, Odissa ranked first 290164.50 MT, followed by Maharashtra (211740.8MT), and Rajasthan (138635.8 MT). However in terms of yield Odissa first followed by Meghalaya Maharashtra etc. Among all the states, Odissa has the highest production and yield of organic crops followed by Maharashtra in India during 2011-12. The certified organic products includes all varieties of food products namely Sugarcane, Cotton, Oil Seeds, Basmati rice,

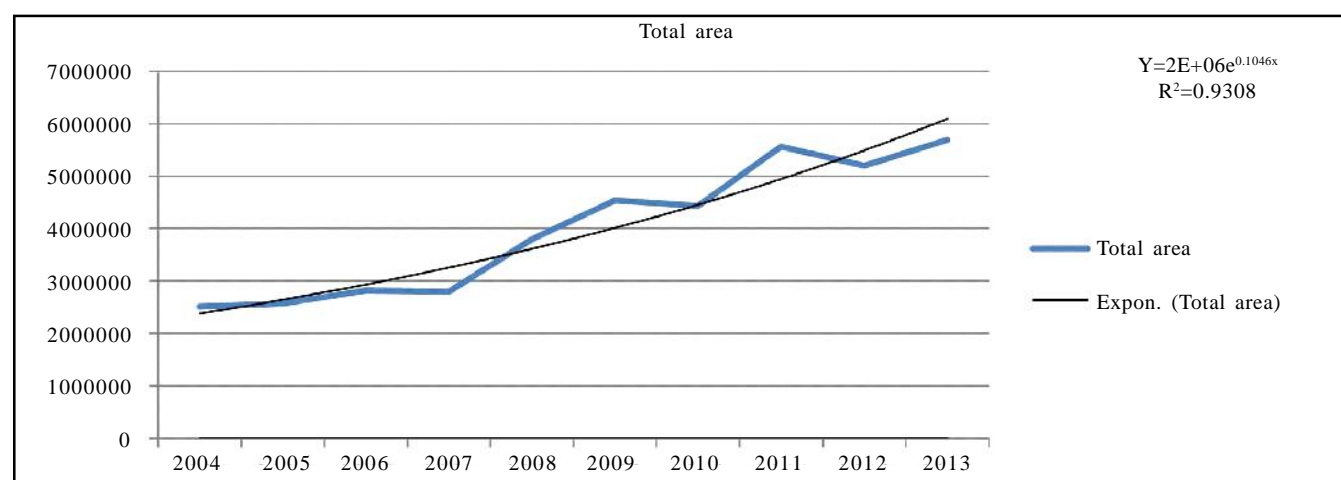


Fig. 3 : Growth of total area

Table 2 : Selected state-wise area and production under organic farming during 2011-12

Sr. No.	State	Area	Percentage	Production	Area in hectares Production in metric tons Yield (MT/HA)	
					Percentage	Yield
1.	Andhra Pradesh	47456.77	0.86	3658.43	0.012	0.08
2.	Chhattisgarh	299970.6	5.40	3153.66	0.011	0.01
3.	Goa	153684.6	2.77	156.65	0.001	0.00
4.	Gujarat	41978.94	.76	9859.58	0.033	0.23
5.	Himachal Pradesh	933798.2	16.82	472.43	0.002	0.00
6.	Kerala	1570.49	0.28	12277.72	0.042	0.78
7.	Madhya Pradesh	432129.5	7.79	83404.75	0.282	0.19
8.	Maharashtra	245339.3	4.42	211740.8	0.716	0.86
9.	Meghalaya	288.23	0.01	9654.38	0.033	33.50
10.	Odissa	43868.18	0.76	290164.50	98.082	661.45
11.	Rajasthan	222319.1	4.01	138635.8	0.469	0.62
12.	Sikkim	25716.55	0.46	4121.78	0.014	0.16
13.	Tamil Nadu	38554.33	0.69	19797.66	0.067	0.51
14.	Uttar Pradesh	2593821	46.73	27526.75	0.093	0.01
15.	Uttarakhand	122880.6	2.21	22439.79	0.076	0.18
16.	Others	332809.03	6.00	20492.55	0.069	0.06
17.	Total	5550405	100.00	29583843	100	5.33

Source: APEDA

Pulses, Spices, Tea, Fruits, Dry fruits, Vegetables, Coffee and their value added products. The production is not limited to the edible sector but also produces organic cotton fibre etc. Among all the states, Madhya Pradesh has covered the largest area under organic certification followed by Himachal Pradesh and Rajasthan, respectively.

Export of organic food products :

Country wise export of organic food products from

India during the year 2013-14 was collected and analyzed using percentage analysis. The results are presented in Table 3.

It could be noted that the organic product are exported to US, European Union, Canada, Switzerland, Australia, New Zealand, South East Asian Countries, Middle East, South Africa etc., The country wise export of organic products from India in 2013-14 indicated that the share of export of organic products in terms of volume to USA (42.16 %) was the highest followed by European

Table 3 : Selected country wise export of organic food products from India in 2013-14

Sr. No.	Country name	Export volume	Percentage share	Export volume Metric Tonnes Export value (Rs. in crore)	
				Export value	Percentage share
1.	Australia	746.95	0.42	14.58	1.10
2.	Canada	38545.57	21.68	182.41	13.73
3.	China	76.35	0.04	1.57	0.12
4.	European Union	56946.72	32.03	553.85	41.69
5.	Iran	38	0.02	1.21	0.09
6.	Israel	312.93	0.18	3.72	0.28
7.	Japan	309.07	0.17	16.12	1.21
8.	Korea Republic	143.48	0.08	2.33	0.18
9.	Malaysia	43.44	0.02	0.91	0.07
10.	New Zealand	599.79	0.34	4.23	0.32
11.	Philippines	110.11	0.06	1.88	0.14
12.	Singapore	73.02	0.04	0.97	0.07
13.	Sri Lanka	78.51	0.04	2.45	0.18
14.	Switzerland	4306.56	2.45	33.89	2.55
15.	USA	74942.72	42.16	498.83	37.55
16.	Others	489.04	0.28	9.65	0.73
17.	Total	177765.26	100.00	1328.6	100

Source: APEDA

Table 4 : Export of organic products from India

Year	Export volume	Export volume in MT Export value in Rs. cr
		Export value
2002	4161	619.6
2003	6288	726.6
2004	8344	953.3
2005	7953	1281.6
2006	7528	987
2007	37533	498
2008	44476	537
2009	58408	526
2010	69837	699
2011	147800	1866
2012	165262	2106
2013	194088	2563
CGR	46.22	34.99

Source: APEDA

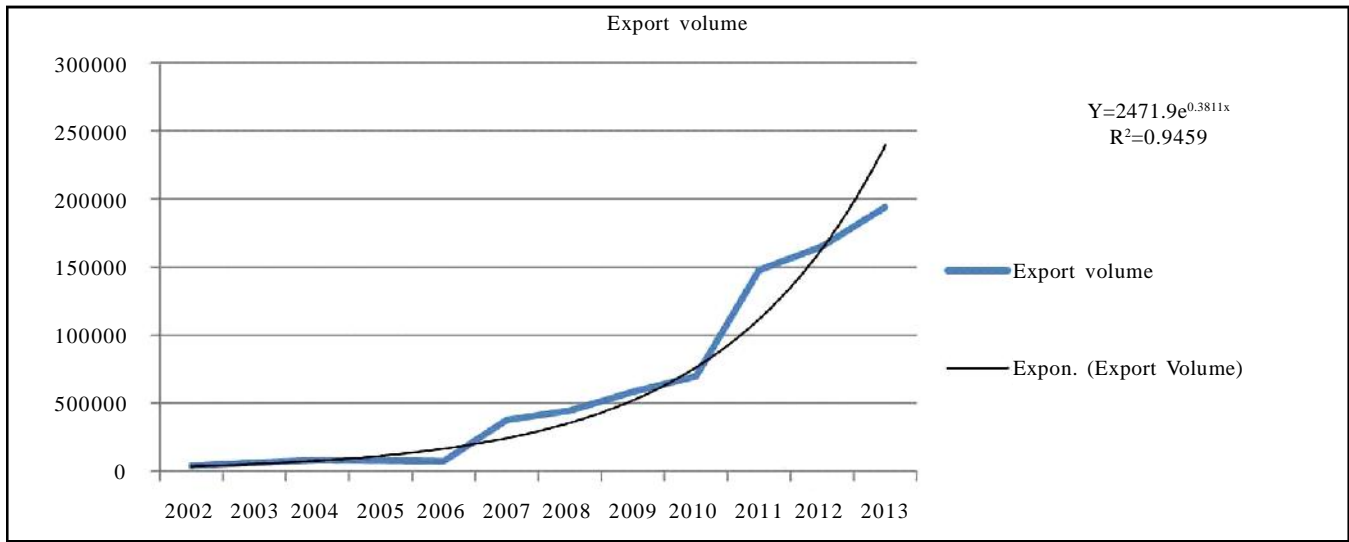


Fig. 4 : Export volume of organic products in India

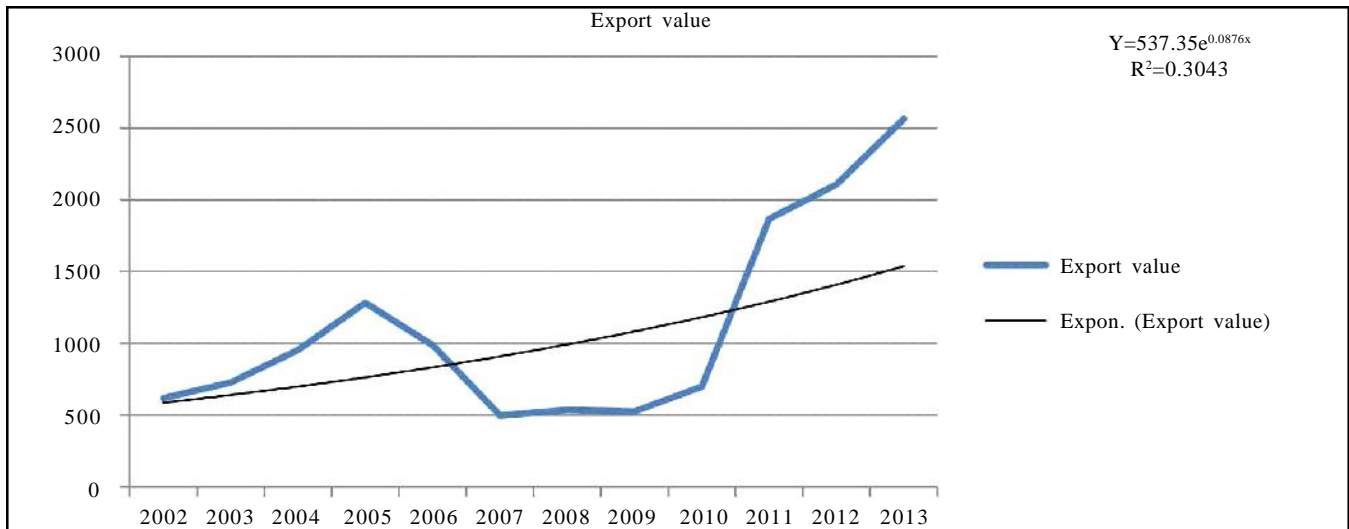


Fig. 5 : Export value of organic products in India

Table 5 : Commodity wise export of organic produce from India in 2011-12

Sr. No.	Product name	Quantity (in MT)	Percentage
1.	Cotton	111382.54	54.04
2.	Cereals and millets (excluding rice)	40785.61	19.79
3.	Rice (Basmati and non- Basmati)	22673.70	11.00
4.	Pulse	12956.69	6.287
5.	Fruits and vegetables	8227.74	3.99
6.	Tea	5273.34	2.55
7.	Oil seeds excluding soybean	2849.80	1.38
8.	Coffee	1376.54	0.66
9.	Dry fruits	521.46	0.25
10.	Medical and herbal plants	189.27	0.091
11.	Miscellaneous	27.36	0.01
	Total	206074.78	100.00

Source: APEDA

Union (32.3 %), Canada (21.68 %). The share of import of organic products by these three nations was around 96 per cent. The total volume of export of organic products from India was 177765.26 metric tons worth of Rs. 1328.6 crores during the period of 2013-14.

The time series data on export of organic products from India was collected from APEDA and it was analyzed using compound growth rate analysis. The results are given in Table 4 and trend line is shown in Fig. 4 and 5.

The increasing demand for organic food products in the developed countries and the extensive support by the Indian government coupled with its focus on Agri-exports are the drivers for the Indian organic food industry. Organic food exports from India are increasing with more farmers shifting to organic farming. With the domestic consumption being low, the prime market for Indian organic food industry lies in the US and Europe. India has now become a leading supplier of organic herbs, organic spices, organic basmati rice, etc. Table 4 revealed that an export of organic products from India in 2002-03 was 4161MT which was went up to 194088 MT in the year 2013-14. Similarly the export value of organic products was Rs. 619.6 crores in 2002-03 which had increased to Rs. 2563 crores in 2013-14. The compound growth rate of India's organic products volume and value of export was 46.22 per cent and 34.99 per cent respectively during the period 2002-03 to 2013-14. India exported 135 products last year (2013-14) with the total volume of 194088 MT including 16322 MT organic textiles.

The export of various organic products from India in the year 2011-12 was collected and analyzed. The results are given in Table 5.

India is one of the most important producers of organic food. The table revealed that the share of export volume of cotton from India was the highest (54.04 %), followed by cereals and millets (19.79 %), basmati rice (11.00 %), pulses (6.2 %) and tea (2.5 %) during the period 2011-12.

Conclusion :

Agriculture is the base of economic policies and is the ultimate driver of national economic growth and poverty alleviation in many developing countries including India. It has vast opportunity for rural employment and livelihood security. Indian agriculture evolved principally as an ecologically sustainable approach using natural

inputs for enhancing crop yield. The demand for organic products is growing fast in countries like USA and Germany. It was clear that area, production and yield of organic produce in India is very low and it varies very widely among different states of India. India has the potential to become a major organic producing country given the international demand for our farm products, different agro-climatic regions for the cultivation of number of crops, the size of the domestic market and above all the long tradition of environment friendly farming and living. However, at the same time increasing health consciousness and increasing disposable income among Indians is ceaselessly increasing the demand for organic food. In Indian context, organic farming development is based on export oriented product because of developed countries. Cotton and cereals and millets farming are performing very well in international export market. The main reason of the organic product emerging as export oriented products is unfriendly use of organic products and high price level of organic products in India. In future the anticipation of the development of the organic farming will increase and consume effectively in International market as well as Domestic market.

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